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Activity Choices of Internally Displaced Persons and Returnees: Quantitative Survey Evidence from Post-War Northern Uganda[1]

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Abstract

We study the effect of living in an internally displaced people's (IDP) camp on economic activity choices in post war northern Uganda. As the decision to relocate from a camp is voluntary, camp residents may be different from returnees. We merge household data with micro-level conflict data to control for endogeneity (selection of households out from camps). We find a strong effect of camp residence on activity choices. Particularly, individuals in IDP camps are more inclined to cultivate and engage in trading, than those who returned. However they are less likely to make handicrafts and participate in any of the wide range of activities. The observation that individuals living in camps strive to ensure self-reliance underscores the need for livelihood interventions and other recovery programmes to target not only returnee households but also create opportunities for households still in displacement. This should be coupled with improvement of security around camps to foster increased economic activity. Results also point to the need to fast-track infrastructure development and stimulate local demand that allows returnees to self-sustain.

Keywords: Activity choice, camp residents, conflict, Internally Displaced Persons, northern Uganda, returnees

JEL codes: J01, O12

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1. Introduction

Governments and individuals face significant challenges in rebuilding economies after war. Conflict leads to the destruction of the productive sector (Collier, 1999; Hess, 2003; Imai and Weinstein, 2000), distorts the social fabric (Collier and Hoeffler 2006; Hoeffler, 2008), undermines the legitimacy of the state (WDR, 2011), and threatens the security of property rights and the rule of law (Imai and Weinstein, 2000). The consequences of conflict are persistent and transmitted across generations (León, 2010). Furthermore, violent conflict results in wide spread internal displacement (Carrillo, 2009; Mesnard, 2009). Globally, the number of persons internally displaced by conflict (IDPs) [2] has steadily increased from 17 million in 1997 to 27.5 million in 2010, with 40% living in Africa (IDMC, 2011). Internal displacement thwarts the capacity of individuals to effectively participate in production and income generation (Aysa-Lastra, forthcoming 2011; Panthee, 2007). This is in part due to overcrowding, restriction of movement and inadequate social and economic infrastructures (Horn, 2009).

As conflicts end, IDPs can consider reintegrating into their original communities. With the decision to leave an IDP camp, people may have to adjust their economic activities. Recovery initiatives may entail the rebuilding of social and economic infrastructures. Consequently individuals who choose to move back to their original homes (also called returnees below) may be in a position to take advantage of the improved security situation and existing initiatives to enhance their capacities by engaging in income generation activities more easily than those who opt to stay longer in camps (camp residents).

However, little attention has been paid to the economic activities that households may be able to engage in the aftermath of conflict[3]. In this paper, we posit that even when early signs of

[2] We define IDPs as individuals who have been forced to flee their homes because their lives were in danger, but unlike refugees they have not crossed an international border (IDMC, 2007)

[3] Some exceptions are Bozzoli and Brück, 2009; Nillesen and Verwimp, 2010. The important role that income generation plays in facilitating household recovery during the post-conflict reconstruction phase has been stressed by De Vries and Specker, 2009; and International Alert, 2008, among others.

recovery are evident, living in a camp may limit the potential of individuals to adopt income generation activities given the likely absence of well- functioning markets. On the other hand, while moving out of camps may reduce on the existing constraints, thus facilitating participation in gainful activities. Investigating how the two categories (returnees and camp residents) fare is important from a policy perspective because, much as both groups suffer burdens at the end of conflict, the magnitude may be different. The issue is also unique from an academic perspective as comparing the activities of the camp residents with those of the returnees is not trivial as these groups are unlikely to be comparable. We overcome this challenge with a novel approach which will also be suitable for other contexts.

We combine data from a detailed cross sectional survey collected a few months after the end of the 20-year civil war in Northern Uganda with a disaggregated geo-coded conflict incidence dataset to study what people do, controlling for their camp status. Because returnees may be different than residents, we use an instrumental variable procedure to account for potential selection on unobservables.

We find that camp residents are more likely to engage in cultivation and trading activities than returnees. However, they are less likely to participate in making handicrafts. Being a camp resident reduces participation in any activity (including all the activities mentioned in the survey but not considered here). The results suggest three possible implications. First, camp residents still possess livelihood-enhancing skills that help them to supplement on relief assistance. Second, the results may signal an absence of or inadequacy in infrastructure in return sites that would facilitate participation in activities. Third, the negative effect on participation in "any activity" could imply that conflict may erode individual skills which may inhibit the capacity to generate income, thus render them unproductive.

Our paper contributes to two literatures: 1) household labour allocation, and 2) economics of conflict and reconstruction at the micro level. We make two contributions to these literatures. First, we compare economic activity choices among individuals who were at any one point internally displaced, investigated during the immediate aftermath of violent conflict. Second, we

employ a novel approach how we capture exposure to conflict. Rather than aggregating the conflict events in the district, we weight the events based on how far they are from respective households, such that individuals residing at different points in the same district may have different levels of exposure to conflict.

The paper is organised as follows: In the next section we review related literature. Section 3 introduces conflict and subsequent displacement in northern Uganda. In section 4 we describe the data sources. Methodological issues are addressed in section 5. Results are presented in section 6. We then discuss the results in section 7 and conclude in section 8.

2. Related literature

On-going or recent violent conflict may constrain the ability to engage in gainful income generating activities (Brück and Schindler, 2009; Justino, 2007; Justino, 2008). Violent conflict may affect the role of labour in production through distortion of the labour market or alter individual skills and abilities (Keen, 2001). The effect of conflict may vary depending on the wealth status of households and whether they are directly or indirectly affected by conflict. Wealthier households may be able to separate activities that generate assets from those that help them to cope with conflict-related risks whereas poorer households rely on the latter (Binzel and Brück, 2007). Furthermore, households heavily affected through, for instance illness, loss of members and recruitment into war may opt to restrict their labour to subsistence farming activities and withdraw from other gainful activities (Justino, 2008). In Rwanda, Justino and Verwimp (2006) find a slight increase in participation of male household heads in cultivation and withdrawal from off-farm activities. Destroyed infrastructure increases transaction cost of exchanges in the market which may drive households into subsistence production (Justino, 2008).

In the event of displacement, there is evidence of human capital depreciation manifested by loss of occupation at point of origin and difficulties in income generation (Ibáñez and Moya, 2010). However, there is evidence that individuals may still be active during displacement. Displaced

Bosnians were less likely to be employed compared to individuals who were not displaced (Kondylis, 2010) [4]. On the other hand, returning may induce individual effort to return to their previous lifestyle. Returnees may even be inclined to perform better than those who were not displaced (Kondylis, 2008).

The effect of conflict on activities may still be felt by households long after war ends. Findings in Uganda indicate that the probability to start non-farm activities is reduced for households affected by war (Deininger, 2003). In Mozambique, households in the post-conflict period were able to engage in potential income generation activities, but the decisions to participate varied across household and seasons (Brück, 2004). Empirical evidence on activity choices in Burundi (Bundervoet, 2009) finds that wealthier households in war regions are more likely to engage in low risk activities during war, while during non-war periods, investment in these activities is reduced. During recovery, development interventions and improved security provide opportunities for households to rebuild their livelihoods but the benefits may not be across the board. In most cases the most vulnerable groups are bypassed by these programmes (Verwimp et al., 2009) and differences in access to assistance hinder household adaptation.

In northern Uganda, Lehrer's (2008) work on gender differences in labour force participation finds a negative impact of conflict on labour force participation of men. Ssewanyana et al (2007) indicate that residence in an IDP camp is highly associated with difficulty in farming. The nature of displacement may also explain individual or household coping potentials. A study by Stites et al., (2006) in the Kitgum district of Uganda finds that social capital is higher among households in semi-settled communities than those in camps. Families in semi-settled communities are able to participate in collective farming and share proceeds from communal land, something not possible in camps.

[4] Kondylis instruments for displacement using the number of casualties in the municipalities of origin.

3. The case of civil conflict in northern Uganda

Since gaining independence, Uganda has experienced much violence. However, the most widespread disruption, which lasted from 1987 until 2006 was the war between the Lord's Resistance Army (LRA) and the government. While this conflict was initially a popular rebellion against the National Resistance Movement (NRM) government, it became a profoundly violent war in which civilians in northern Uganda were the main victims. The long period of violent conflict, which was more pronounced in the Acholi sub region[5] (and later in Lango and some parts of Teso)[6], was marked by displacement of people from their homes. The year 1996 marked the beginning of widespread and systematic internal displacement following a government strategy to protect civilians and aid the army's counter-insurgency campaign against the LRA by forcing households into "protected villages" while it pursued a "military solution" against the rebels. Protected villages were, in essence, camps for the internally displaced persons (IDPs).

In 2002, the Ugandan government carried out "Operation Iron Fist," a military offensive in Sudan that drove the rebels back into northern Uganda. The Ugandan government strategy of encampment continued, with an estimated 825,000 people forcefully displaced in Acholi and parts of the Lango sub region. The LRA attacks in Teso and Lango sub regions in mid-2003 further increased the number of displaced peoples. Less than a year later, the estimates suggest that 1.6 million people were displaced (Médecins Sans Frontières, 2004), over 90% of the population in the region. This represents one of the largest displacements in relative terms worldwide in recent years. The protection of civilians in the displacement camps was not effective as many of the most serious massacres and waves of abduction occurred during the time when people were displaced into the camps (Stites, 2006).

[5] As of 2007, Acholi sub region was comprised of Amuru, Gulu, Kitgum and Pader districts, while Lango sub region was made up of Apac, Lira and Oyam districts. These form part of northern Uganda which also covers Karamoja sub region (north Eastern Uganda) and Westnile (North Western). Teso sub region is in Eastern Uganda.

[6] Fiala (2009) notes ethnic differences associated with language barrier as one of the factors why rebels may have concentrated their activities more in Acholi land where the language was familiar and infiltrated the Lango area at later at the peak of the war.

While living in camps the people were subject to poverty, political marginalization, limited healthcare and strained social bonds. In 2003, the lack of national and international response to the massive humanitarian needs in IDP camps led the then UN Emergency Relief Coordinator to describe the humanitarian crisis as the "biggest forgotten, neglected humanitarian emergency in the world today" (Moreno-Ocampo, 2005). Although the camps had existed for several years, by 2006 the army still had not provided effective defensive perimeters that would allow camp residents the freedom to access their farm lands. Less than half of the IDPs could use land that was within the two kilometres safety parameter of the camps, which affected their ability to produce food (International Crisis Group, 2006). This limited many households to cultivating small plots along army-patrolled roadsides which were insufficient to feed them (Baines, Stover, and Wierda, 2006). As a result, displacement undermined agricultural production since large tracts of land remained unused or underutilized during the war period (GoU, 2007). The day-to-day reality of the war had a negative effect on the wellbeing of households, including their access to livelihood opportunities.

In 2006, following peace talks and the subsequent attacks by the Ugandan government and allied forces on rebel camps, the security situation dramatically improved and many displaced persons started returning home, although patterns of return varied widely across regions (Bjorkhaug *et al.,* 2007). By late 2007, more than 50% of the IDP population voluntarily resettled in their home villages or in transit settlements that were closer to their villages. Nonetheless, in 2007 the region still faced several challenges to bring it to the same level of development as the rest of the country.

According to the 2007 National Human Development Report (UNDP, 2007), Northern Uganda districts like Gulu, Amuru, Kitgum and Pader scored lowest on the HDI (Human Development Indicator) table. The region also manifested the lowest probability of living past 40, the highest levels of illiteracy and percentage of children under-weight at birth (25%). According to UBoS (2006), 68%of the population was below regional poverty line in 2005 and had not registered significant decline unlike other Ugandan regions.

Effective participation in income generating activities in both IDP camps and return areas was hindered by factors such as closure of active markets, difficulties in accessing credit, and loss of skills (DANIDA, 2005; UBoS, 2006). This partly explains the proportion of inactive working-age population in the region, with households mainly relying on transfers from relief agencies as the main source of earning (UBoS, 2006). The Survey of War Affected Youth (Annan et al., 2008), a study documenting realities and ways forward for communities in northern Uganda, reports that in spite of people increasingly becoming involved in income generating activities, more than half of the youth worked fewer than eight days per month and 21% of male and 14% of female youth work zero days per month. These impediments result in an enormous economic loss, estimated at around US $100 million annually (GoU, 2007).

4. **Modelling IDP status and activity choice**

We assume that individuals make decisions based on the objective of utility maximization, adopting an additive random utility model (Cameron and Trivedi, 2005). An individual decides to engage in an activity y ($y=1$) or not ($y=0$), using a utility with arguments x and a disturbance term with zero mean such that:

$U_{i1}(x)=\beta_i x_i+\varepsilon_{i1}$ for adopting a given activity (1)

$U_{i0}(x)=\beta_0 x_i+\varepsilon_{i0}$, otherwise

In this framework, the i[th] individual selects the alternative "adoption" ($y=1$) if the utility associated with it is higher than the utility derived from no adoption. Thus, the probability of adoption is given by:

$$P(y=1)=P(U_{i1}>U_{i0})=P(\beta_1 x_i+\varepsilon_{i1}>\beta_0 x_i+\varepsilon_{i0})=P(\varepsilon_{i1}-\varepsilon_{i0}<\beta_1 x_i-\beta_0 x_i)=P(\varepsilon_i<\beta x_i)=\Phi(\beta x_i) \quad (2)$$

Where Φ is the cumulative distribution function.

Our main interest is in examining the effect of residence status (still in camp or not) on the individual choice of economic activities. There are different threats to validity when comparing those who moved and those who stay using multivariate regressions. Chiefly, the existence of

potential livelihood options outside camps might selectively encourage certain individuals to leave camps in search of a better life. Ignoring this selection on unobservables can lead to biased parameter estimates. To address this, we jointly model IDP status and activity choice. Since the two dependent variables are dichotomous, we adopt a bivariate probit model. This involves a simple recursive model (for details see Maddala, 1983). This model is useful when two dependent variables are interdependent, which is the case in this study, or when they depend on a common set of explanatory variables. The basic model can be specified as a set of structural equations involving a dummy endogenous variable. Our endogenous variable y_{1i} (*indicating whether one resides in a camp*) and our other dependent variable of y_{2i} (*activity choice*) can each be viewed as being chosen by unobserved respective latent variables indicated as y_{ki}^{*}. The latent variable assumes a positive value when the underlying observable indicator is equal to one and a negative value when the indicator is equal to zero. That is:

$$\begin{aligned} y_{ki} &= 1 \rightarrow y^{*}_{ki} > 0 \\ y_{ki} &= 0 \rightarrow otherwise \end{aligned} \qquad (3)$$

In our case,

$y_{1i} = 1$ if the individual is observed to be residing in an IDP camp and 0 otherwise,

$y_{2i} = 1$ if the individual is observed to be participating in activity i and 0 otherwise.

These two variables are linked through the following structural model.

$$\begin{aligned} y_{1i}^{*} &= \beta X_1 + u_{1i} \\ y_{2i}^{*} &= \gamma y_{1i} + \gamma X_{2i} + u_{2i} \\ u_1, u_2 | x_1, x_2 &\sim N(0,0,1,1,\rho) \end{aligned} \qquad (4)$$

Note that our parameter of interest is the effect of the endogenous dummy variable (residence status) on the discrete outcome, that is, γ. We control for exogenous variables X_{1i} and X_{2i} in both equations, and these are assumed to be independent of the error terms u_{1i} and u_{2i}.

$N(..,..,..,..,\rho)$ indicate the standard bivariate normal distribution assumption (for identification) with correlation coefficient ρ (between u_{1i} and u_{2i}). The recursive probit model estimates are consistent provided that u_1 and u_2 are bivariate normal even if they are correlated. $H_0 : \rho = 0$ indicates that a probit model for activity choice is preferred over a bivariate probit model. Otherwise the equations should be modelled jointly, since a standard probit model would deliver inconsistent estimates.

Because unobservables (e.g. skills, risk attitudes) may jointly affect residence status and activity adoption, we use an instrument that is assumed to affect activity choice only through its effect on residence status. It can be argued that conflict occurrences in the place of birth of the household head are exogenous to the household's current status and that they strongly influence settlement decision. The household's decision to leave the camp is highly influenced by the head. Ideally a household would prefer to return to their place of origin (Bjorkhaug et al., 2007), and this is most certainly the place of the household head's birth, in the case of male-headed households. A number of factors may influence return to the place of origin. Most striking is the fact that land is communally owned. Under this arrangement land is managed by individuals elected by the clan and it consists of grazing land and other land for communal facilities such as markets. The clan also allocates land to families for exclusive use. Therefore, for easy access to land (and other family linkages), a household is better-off returning to the ancestral home. A household may opt to stay in the camp because its safety is not guaranteed given a range of spontaneous attacks outside camps.

In sum, our identification assumption is that conflict occurrence in the place where the household head originates has no direct influence (conditional on control variables) on choice of activities but on IDP status. This assumption justifies the use conflict intensity at the place of birth of the household head to instrument for IDP status.

5. Data and variables

5.1. Sources

Data for this paper come from the Northern Uganda Livelihood Survey (NULS) conducted between April and May 2007. The survey was jointly administered by the Uganda Bureau of Statistics (UBoS) and the Norwegian FAFO Institute for Applied International Studies.
(Figure 1 about here)

A detailed description of the survey can be found in Bjorkhaug et al., (2007). The unique feature of this survey is that it is the first comprehensive survey ever conducted in the region immediately after the end of the war and, therefore captures features of both war-time and recovery. The survey is representative of households residing in IDP camps in northern Uganda at some point during the conflict. It covered a sample of 3900 households in six districts (Amuru, Gulu, Pader, Kitgum, Lira and Oyam) using a two-stage cluster design. In the first stage, a list of IDP camps, camp residents and returnees was obtained to determine the number of selection areas in each community. In the second stage four households in return areas and five in IDP camps were randomly selected. The questionnaire collected information on demographics, camp situation, and household economy for each member of the households sampled. The survey provides information on activities that individuals were currently involved in. The survey instruments were geo-referenced to the household level and therefore facilitate linking households to conflict events.

We also use the Armed Conflict Location and Events Data-ACLED (Carlsen et al., 2010) to obtain information on conflict episodes in the region. The data were obtained from press reports, humanitarian reports, periodicals, books written on the conflict and information obtained from the Uppsala Armed Conflict Project archives. Effort was made to document conflict events, the specific dates, actual geographic locations and perpetrators. An event in the ACLED dataset is recorded in various ways; 1) a battle between government forces and rebel/armed groups; 2) an attack either by the rebel/armed group or government forces on civilians; 3) a battle between rebel movements; and 4) community uprising (e.g. riot). For Uganda there are no events in the

third and fourth categories during the period in question. The survey provides information on 189 village level-events that occurred in 2006 and 4 events between January and March 2007 in the 6 districts, shortly before the household survey was collected. This makes it possible to analyse this disaggregated data with geo-referenced household surveys, thus linking households and locations to violent conflict occurrences in order to observe responses.

5.2. Measures

We consider three dichotomous variables representing activity choices, namely cultivation, trading, handicrafts and engagement in any activity. The choice of activities is justified by the proportion of the sample engaged in them. The questionnaire provides for a wide range of activities but very few had a sizeable number of participants. We, therefore, selected activities with at least 5 percentage points of the sample participating. In this regard, our analysis focuses on three activities, namely *CULTIVATES* (individual cultivates), *CRAFTS* (makes handicrafts), and *TRADES* (involved in trading). Another variable "*ANYACTIVITY*" was constructed to allow for the possibility of engaging in any activity including those with only a few individuals involved.

Note that the key drawback of NULS (2007) is that no questions investigated whether the respective individuals were involved in the same activities as during the preceding period. We can only tell whether an individual is currently involved in an activity, participated in the activity in the previous year (but not both), or has never been involved in it. Second, we cannot ascertain income from these activities because information about local prices and total production was not enumerated. Therefore, it is not possible to identify the contributions of respective activities to overall household income. Thus, we focus on the decision to engage in a given activity at the time of the survey.

There are three categories of residence status in the sample. The first category includes individuals residing fully in IDP camps. The second includes individuals who spend time commuting between their respective camps and areas outside camps (transitional sites or ancestral home) and therefore spent days or weeks away from the camp. The third category

represents those who already left the camp and moved to their ancestral village or settled closer to their homes (in transit sites). Since the second category (commuters) spend time in IDP camps and continued to benefit from services in IDP camps, we include them in the category of IDP residents. Even then, they represent a small proportion (6%) of the category.

We also include an indicator of duration in the camp (*CAMPDURAT*) to investigate how differences in the period of displacement (in years) may influence activity choices, and this is assumed to be exogenous (Lehrer, 2008). Individuals living in Lango sub region during 2006 are more likely to be active than those living in Acholi. This is because in addition to being affected much later by the war, Lango experienced faster recovery. To capture this effect and avoid potential confounding we include "*LANGO06*", an indicator of whether an individual was in Lango in 2006.

Among measures of socioeconomic status, we control for age of individuals in the productive age with four categories (*AGE_15-25, AGE_26_36, AGE_37_47, and AGE_48_64*). We include a binary measure of household type indicating whether an individual lives in a household headed by a female (FEMHEAD). We also control for individual status in the household (*HEAD, SPOUSE*), dependence ratio (*DEPRATIO*), literacy (*LITERATE*), household size (*HHSIZE*) and previous marketable skills of the head (*HEAD_HERD, HEAD_TRAD*).

Another set of controls includes indicators of the infrastructure situation in the location. Specifically, we control for whether the location has a health facility or school (*HL_SCH*). The presence of these facilities may enhance human capital. We also include a variable indicating whether the location has access to water or a market (*WAT_MRK*), to reflect possible concentration as households position themselves closer to these facilities. A third variable, *CONWELLS*, is constructed to capture current involvement in digging wells. These indicators control for i) the degree of devastation that the war has particularly on return sites; ii) the availability of "amenities" acting as pull-push factors; and iii) the degree of isolation (absence of markets), which may affect activity choice.

We construct a conflict intensity index representing exposure to conflict at the place of origin of the household head in 2006 (Bozzoli and Brück, 2010). Rather than aggregating the conflict indicator at community or district level (Nillesen and Verwimp, 2010; Kondylis, 2010), our approach involves disaggregating exposure by linking each individual to respective events. The starting point is the description of a conflict event (subscript j). A definition of an event in the ACLED dataset is described in the next section (5). In order to construct the index, we require information about the geographic location of each event in that year. This is provided by a two-dimensional vector (c_j) representing its GPS coordinates. In each year, there are J events. The events are ordered such that $j = 1.....J$. We consider the year 2006 for two reasons. First we know from survey data where the household was located in 2006. Second, between January 2007 and March 2007 (shortly before the survey was collected), the ACLED dataset in total coded only 4 events in two districts, compared to 89 conflict events in 2006. Constructing an index for 2007 would produce very small values close to 0.

We also require information about the geographic location (coordinates) of the head's ancestral home in order to derive the indices for respective locations. The resulting index ($C(h)$) can be defined as:

$$C(h) = \sum_{j=1}^{J} e^{-\alpha(d(c_j,h))} \qquad (5)$$

where d is the absolute squared distance (in degrees) between each of the events and the household in a given year, expressed as:

$$d(c_j, h) = \left\| c_j - h \right\|^2 . \qquad (6)$$

Function $\exp(-\alpha x)$ discounts events by their distance from a given household. These events are weighted depending on how close they are from the respective individuals or households. Note that the index is at the household-level but calculated at the individual level for each household-head; all members in the household share the same GPS coordinates. This implies that the index can differ between two individuals residing at different locations in the same district.

The parameter α, which can be interpreted as a distance-discount factor, is chosen by evaluating different values and choosing one with the best fit (joint log-likelihood) in the models. We calculated the conflict indices for discrete choices of α, and the log likelihood function was maximized (over this set of values) at $\alpha = 10$ for all models. We, therefore, consider this value for every model in our analysis.

6. Results

6.1. Descriptive statistics

Table 1 presents the definitions and summary statistics for the variables used in the analysis. The statistics exclude individuals above 15 years as we do not investigate issues of child labour. We also exclude individuals above 64 years since this category is generally considered inactive.

(Table 1 about here)

The differences in activity choices between camp residents and returnees are not highly marked. This could partly be explained by close characteristics between them both at household level and individual level. Close to 87% of camp residents were involved in cultivation, 11% in handicrafts and 22% were active in trading.

(Table 2 about here)

More individuals in return areas were involved in cultivation (88 %), crafting (7%) and in any activity (96%), the proportion of camp residents involved in petty trading was about 5 percentage points higher than their counterparts in return areas. Testing for mean differences reveals statistical differences in all activities between the two groups except cultivation. We find statistically significant differences between men and women for crafting and petty trading, with more women involved in both activities. A comparison of women in both groups (not presented here) indicates that more women in return locations are involved in handicrafts (10%) compared

to their counterparts in camps (7%), but the latter dominate in petty trading (7 percentage points). The activity choices for men follow the same pattern as women.

Overall, 65% of the sample was still in the camps. The sub region consists of a young population averaging 29 years, and the gender distribution of the population is balanced. As we would expect, statistics indicate the presence of more female-headed households in camps (24% versus 15% outside camps). We also observe a high proportion of returnees located in areas that were affected much later (Lira and Oyam sub regions), compared to residents in Acholi sub-region who started experiencing displacement as early as 1997.

Regarding infrastructure, about 35% in the full sample had access to a health facility or school (*HL_SCH*), with more camp residents (78%) having access than those returnees (12%). About 29% of individuals in the full sample had access to water or markets (*WAT_MRK*). While more camp residents (63%) could access either of the two facilities, only 12% of returnees could say the same. We also observe more returnees (20%) involved in constructing wells (*CONWELLS*) compared to 12% of camp residents, indicating that in return areas, there was either a shortage or old wells had been destroyed during the war.

The conflict index for location at the place of birth of the household head was higher for camp residents than the sample for those who moved out as well as the full sample. In Figure 2 we, observe differences in the distribution of the indices.

(Figure 2 about here)

Figure 3 (panels A-C) illustrates the trend of conflict intensity at the place of birth of the head for the period 2002-2006. Notice that the index varies as we adjust the distance discount factor. The index for 2006 is lower than other years, indicating a window of opportunity to move away from camps. As expected, index is higher for lower levels of the discount factor ($\alpha = 5$ in our case) and decreases for higher values of α ($\alpha = 10,15$).

(Figure 3 about here)

6.2. Regression results

For comparison purposes we provide two sets of regression results. The probit results (table 3) do not take into account possible endogeneity of IDP status and activity choices. Comparison of these results with the recursive bivariate probit model (table 5 specification *I for each activity*) reveals substantial differences. First, we notice that the signs of some explanatory variables change when we control for endogeneity. For instance, the residence status variable (*IDP*) has a negative coefficient in the probit model for cultivation and trading but is positive in the bivariate probit model.

(Table 3 about here)

Second, we notice changes in significance levels of some coefficients. The IDP variable has no effect in all activities in the probit model except for trading where it is marginally significant, but is significant for all activities once we control for endogeneity. While on the one hand, residence status variable is significant in the model for cultivation, on the other hand, camp duration (*CAMPDURAT*), dependence ratio (*DEPRATIO*) and household size (*HHSIZE*) are insignificant in the model for "any activity" once we control for endogeneity.

The Wald test for exogeneity of IDP status is rejected for all the activities, implying that the error terms in both equations are uncorrelated. The Wald test results for $\rho = 0$ are shown in table 5. Consequently we have reason to believe that the decision to stay in the camp is an endogenous regressor in the activity choice decision. We, therefore base our evaluation on bivariate probit results.

The validity of our results rests in part upon whether the instrument, *CONFBIRTH2006*, highly correlates with residence status. This is shown to be true in table 4. The coefficient on the instrument is a strong positive predictor of residence status and is always significant at the 5% level for all models. High conflict intensity at the place of expected return increases the likelihood of individuals still staying in the camp. Other positive influences on residence status are duration in the camp and female headship, while living in Lango sub region in 2006 (*LANGO06*) is a negative predictor. Regressing the instrument as one of the independent variables

in the activity choice models reveals no explanatory role (z-stat: -1.281 for cultivation, -1.416 for crafts, -1.538 for trading, and -1.103 for any activity).

(Table 4 about here)

Notice that in tables 5 and 6 we provide two specifications. Specification (*i*) for each activity is identical to the specifications in the probit model (table 3). In the second specification, we include controls for facilities and perception of general security to pick up any possible direct effect that our instrument could otherwise have on the dependent variable. However controlling for these factors, there is no substantial difference in the effect of the residence status on activity choices in terms of significance levels and sign. The level of significance of the instrument in the first stage remains the same across specifications. The bivariate probit model (table 5) fits the data well as indicated by the chi^2 values.

(Table 5 about here)

If we had not used a model taking into account the correlation in error terms, the effect would have been interpreted as negative. The corresponding correlation coefficients (rho estimates) for *CULTIVATES, TRADES* and *ANYACTIVITY* have negative signs. This implies that the unobservables, which make individuals more likely to stay in camps, reduce the likelihood of individuals engaging in these activities. This could provide justification for the negative coefficients of these variables in the probit model.

We find a strong effect of camp residence on activity choices. Particularly, camp residents engage less in handicrafts and any activity. However, it turns out that they are more likely than returnees to cultivate or trade. Whereas the effect of IDP status is positive for the three activities, living longer in the camp (*CAMPDURAT*) significantly reduces probability of participating in them. Participation in activities is less likely for older people (*AGE_48_64*) compared to younger individuals. For household whose heads were previously engaged in trading (*HEAD_TRADE*) and herding *(HEAD_HERD)*, there is a high likelihood of engaging in the activities. Among the indicators of infrastructure, access to water and market increase the likelihood of cultivating,

while construction of wells reduces the possibility that the individual will participate in making handicrafts.

6.3. Robustness checks

In the preceding analysis, we estimated the model for conflict intensity at $\alpha = 10$. To assess the role of the discount factor, we re-estimate the model for different α levels. A higher value of α implies a larger weight to conflict events that are nearby (from the individual's point of view). Since calculating the index for each single value is computationally intensive, we re-estimate the model for two values, namely for 5 and 15. We find that the magnitude of the effect of the IDP status variable is lower for larger values of α although the difference is not highly marked (table 6). The signs of the coefficients remain unchanged for all models.

(Table 6 about here)

In the next set of results (table 7), we omit commuters from the sample. All variables that were significant in the earlier results remain significant although there are marginal changes in their magnitude. Our key variable (IDP) remains strongly significant and maintains its signs.

(Table 7 about here)

7. Discussion

A positive relationship between IDP status and cultivation is generally unexpected given the usual challenges of land access faced by displaced households. However, in the context of northern Uganda, the results may be plausible. First, it might imply that individuals living in camps work harder to reinstate their former standard of living. Second, they may have limited livelihood options available and therefore opt to cultivate (Bozzoli and Brück, 2009). In the absence of strong labour demand and social security nets, farming may be the activity of last resort. Reports indicate that households had access to small plots of land around the camps and

produced a limited amount that supplements to food aid (Bjorkhaug *et al*, 2007). It could be that individuals in camps are more inclined to cultivate but produce less than returnees. However, we cannot ascertain the output for either.

We find that camp residents are more likely to engage in trading. Two possible reasons could be at play. First, given limited income generation sources and inadequate aid to provide for all basic requirements of displaced households, individuals might be engaging in sale of food and other aid to generate income[7]. An IDP profiling study for Uganda conducted in 2005 (Bøås and Hatløy 2005) reports that about 14% of households sold food aid. Thus, the variable could be picking up the effect of aid in IDP camps. Second, low output market density in return areas may discourage trading. In IDP camps, in contrast there are large collections of people providing a market for products, however meager demand and proceeds may be. Evidence of economic opportunities related to petty trading in IDP camps is cited by qualitative studies as one of the major hindrances to return (IDMC and NRC, 2010).

We also find that camp residents are less likely to participate in any of the wide range of activities compared to returnees. This observation may signal the loss of skills associated with displacement. Deterioration of skills may render individuals unproductive. Activities such as crafting require extracting inputs far from camps. This could explain high involvement of returnees than camp residents in handicraft making.

8. Conclusions

In this paper, we provide evidence of the effect of camp residence on adoption of economic activities. We observe that controlling for endogeneity of activity choices and location results in substantial differences with a probit model that does not take cognizance of potential correlation in error terms. We find that residing in an IDP camp poses both negative and positive effects on decisions to engage in income generation activities. The high likelihood to engage certain

[7] Therefore any analysis that may be based on household incomes as a proxy of welfare may require careful interpretation as incomes may be derived at the expense of consumption.

activities among camp residents may probably be explained by opportunities within or around these settlements which returnees may not have access to especially at the start of recovery.

The analysis demonstrates that individuals living in displacement still possess livelihood enhancing skills that may help them cope during recovery. It has been common practice for development agencies to operate on the premise that displaced households mainly seek physical survival and therefore require food aid and interventions that enhance access to basic necessities of life. The observation that households living in camps strive to ensure self-reliance underscores the need for livelihood interventions and other recovery programmes to target not only return households but also create opportunities for households still in displacement. This should be coupled with improvement of security around camps to foster increased agricultural activity.

The benefits of such interventions could be twofold. On one hand, displaced households can be in a position to sustain themselves by supplementing on relief assistance, which is usually insufficient. On the other hand, preserved skills can be undoubtedly relevant to expedite household adaptation on return. Programmes that by-pass displaced households may instead constrain their capacity to recover after return.

Findings may also point to absence or inadequacy of relevant infrastructure such as markets in return sites to facilitate private activity. Slow reconstruction efforts in return sites may result in delayed camp decongestion as households may opt to stay longer in camps with better infrastructure. In the process of resettlement therefore, it is important to fast-track infrastructure development and stimulate local demand that allows returnees to self-sustain.

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Table 1: Descriptive statistics (age category 15-64 years)

Variable	*Description*	*Full Sample n= 5329*	*Still in camp 3396*	*Moved out 1933*
Individual characteristics				
AGE_15_25	Individual is aged between 15-25 years	0.450	0.448	0.454
AGE_26_36	Individual is aged between 26-36 years	0.279	0.284	0.271
AGE_37_47	Individual is aged between 37-47 years	0.162	0.158	0.170
AGE_48_64	Individual is aged between 48-64 years	0.108	0.110	0.105
FEMALE	Individual is female (1=Female, 0, Male	0.478	0.5	0.445
HEAD	Dummy=1 if head, 0, otherwise	0.355	0.352	0.359
SPOUSE	Dummy=1 if spouse 0, otherwise	0.252	0.263	0.234
SINGLE	Dummy=1 if single, 0, otherwise	0.339	0.338	0.341
LITERATE	Dummy=1 if individual is literate, 0 otherwise	0.575	0.555	0.606
Household Characteristics				
FEMHEAD	Headed is female; 1=yes, 0, 0therwise	0.207	0.244	0.148
DEPRATIO	Dependency ratio	1.263	1.258	1.27
HSSIZE	Number of people in the household	6.758	6.5	7.163
HEAD_HERD	Head has ever herded; 1=yes, 0, otherwise	0.661	0.634	0.702
HEAD_TRAD	Head has ever traded; 1=yes, 0, otherwise	0.403	0.414	0.386
Activity choices				
CULTIVATES	Currently cultivating; 1=yes, 0, otherwise	0.869	0.862	0.881
CRAFTS	Currently making handicrafts; 1=yes, 0, otherwise	0.056	0.047	0.071
TRADE	Currently trading; 1=yes, 0, otherwise	0.197	0.215	0.167
ANYACTIVITY	Engaged in any activity income gen	0.937	0.925	0.956
Location variables				
IDP	Camp resident ; 1=yes, 0, otherwise	0.654		
CAMPDURAT	Duration in camp (in years)	6.212	7.463	4.247
LANGO06	Lived in Lango sub region in 2006	0.413	0.225	0.708
AMURU	Amuru District	0.091	0.131	0.028
GULU	Gulu District	0.139	0.196	0.05
PADER	Pader District	0.235	0.259	0.197
KITGUM	Kitgum District	0.121	0.189	0.015
LIRA	Lira District	0.16	0.069	0.303
OYAM	Oyam District	0.254	0.156	0.407
Infrastructure and Security				
HL_SCH	School/health facility in the community (=1)	0.346	0.780	0.122
WAT_MRK	Water/market available in community (=1)	0.289	0.626	0.115
CONWELLS	Currently digging wells (=1)	0.146	0.115	0.204
SECURITY	Security situation better than last year(=1)	0.884	0.881	0.891
CONFBIRTH2006	conflict index at place of birth of head in 2006	23.525	23.959	22.842

Notes: Sampling weights used

Table 2: Test for mean differences

	Residence status			Gender		
	Still in camp	*Moved out*	*P-Value diff*	*Female*	*Male*	*P-Value diff*
Ind. CULTIVATES	0.862	0.881	0.171	0.874	0.70	0.546
Ind. CRAFTS	0.047	0.071	0.04	0.076	0.042	0.000
Ind. TRADES	0.215	0.167	0.002	0.247	0.172	0.000
Ind. ANYACTIVITY	0.925	0.956	0.001	0.936	0.935	0.794

Note: Age category 15-64 years

Table 3. Probit model for determinants of activity choices (ignoring endogeneity of residence status).

	CULTIVATES	*CRAFTS*	*TRADES*	*ANY ACTIVITY*
Individual Characteristics				
AGE_15_25	0.341**	0.273*	0.216*	0.418***
	(0.110)	(0.139)	(0.098)	(0.115)
AGE_26_36	0.258*	0.345**	0.333***	0.356***
	(0.100)	(0.124)	(0.086)	(0.105)
AGE_37_47	0.337**	0.380**	0.261**	0.384***
	(0.111)	(0.138)	(0.094)	(0.116)
FEMALE	0.013	0.354***	0.351***	0.077
	(0.079)	(0.095)	(0.070)	(0.082)
HEAD	0.200	-0.060	0.633***	0.253*
	(0.129)	(0.187)	(0.118)	(0.127)
SPOUSE	0.268*	-0.096	0.446***	0.296*
	(0.128)	(0.173)	(0.114)	(0.129)
SINGLE	-0.191	-0.334*	-0.302**	-0.263*
	(0.114)	(0.163)	(0.109)	(0.115)
LITERATE	-0.003	0.214**	0.106	0.044
	(0.061)	(0.077)	(0.056)	(0.065)
Household Characteristics				
FHEAD	-0.008	-0.105	-0.059	-0.029
	(0.081)	(0.106)	(0.074)	(0.084)
DEPRATIO	-0.094**	0.025	-0.018	-0.075*
	(0.034)	(0.042)	(0.031)	(0.036)
HHSIZE	0.129***	-0.157***	0.027	0.113**
	(0.035)	(0.041)	(0.032)	(0.037)
HHSIZESQ	-0.007***	0.007***	-0.001	-0.007***
	(0.002)	(0.002)	(0.002)	(0.002)
HEAD_HERD	0.377***	0.278***	0.180**	0.370***
	(0.059)	(0.082)	(0.057)	(0.061)
HEAD_TRAD	0.096	0.474***	0.985***	0.261***
	(0.057)	(0.072)	(0.052)	(0.061)
Location-level Charcteristics				
IDP	-0.039	-0.142	-0.146*	-0.032
	(0.069)	(0.073)	(0.058)	(0.072)
CAMPDURAT	-0.016*	0.010	-0.014*	-0.018*
	(0.006)	(0.008)	(0.006)	(0.007)
LANGO06	-0.308	-0.578	-0.617	-0.285
	(0.382)	(0.626)	(0.573)	(0.361)
DISTRICT FE				
OBSERVATIONS	6098	6098	6098	6098
WALD CHI2	172.2	154.7	641.8	184.7
RSQ	0.062	0.0849	0.172	0.0749

Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05, Sampling weights used.

Table 4. First stage results: Determinants of IDP status

	CULTIVATES		*CRAFTS*		*TRADES*		*ANY ACTIVITY*	
	(i)	*(ii)*	*(i)*	*(ii)*	*(i)*	*(ii)*	*(i)*	*(ii)*
LITERATE	0.033	0.030	0.026	0.028	0.026	0.027	0.029	0.028
	(0.053)	(0.053)	(0.054)	(0.055)	(0.053)	(0.053)	(0.053)	(0.053)
FEMHEAD	0.174*	0.175*	0.172*	0.174*	0.161*	0.161*	0.173*	0.173*
	(0.081)	(0.080)	(0.077)	(0.077)	(0.079)	(0.079)	(0.080)	(0.079)
HEAD_HERD	-0.030	-0.033	-0.051	-0.051	-0.054	-0.053	-0.028	-0.031
	(0.063)	(0.064)	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)	(0.064)
HEAD_TRAD	-0.028	-0.025	-0.003	-0.005	-0.015	-0.016	-0.027	-0.025
	(0.070)	(0.070)	(0.069)	(0.069)	(0.068)	(0.068)	(0.069)	(0.070)
CAMPDURAT	0.070***	0.070***	0.071***	0.071***	0.074***	0.074***	0.070***	0.070***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.007)	(0.008)	(0.008)
LANGO06	-1.535***	-1.535***	-1.537***	-1.537***	-1.525***	-1.525***	-1.533***	-1.534***
	(0.075)	(0.075)	(0.074)	(0.074)	(0.073)	(0.073)	(0.076)	(0.075)
CONFBIRTH2006	0.017**	0.013**	0.013**	0.014**	0.013**	0.013**	0.014**	0.014**
	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)
Observations	5481	5470	5481	5470	5481	5470	5481	5470
Wald chi2	3397	3589	2512	4280	5292	6520	4360	4711
Rho	-0.614	-0.540	0.402	0.385	-0.661	-0.652	-0.697	-0.633
Wald test of Rho=0	9.149	6.059	4.081	3.952	12.52	11.45	8.923	6.565

Standard errors in parenthesis.*significant at 10%; ** significant at 5%; *** significant at 1%. Sample weights used

Table 5: Effect of IDP status on activity choices (controlling for endogeneity)

	CULTIVATES		*CRAFTS*		*TRADES*		*ANY ACTIVITY*	
	(i)	*(ii)*	*(i)*	*(ii)*	*(i)*	*(ii)*	*(i)*	*(ii)*
Individual characteristics								
AGE_15_25[8]	0.399**	0.400**	0.316	0.246	0.128	0.124	0.477***	0.474***
	(0.124)	(0.128)	(0.165)	(0.162)	(0.099)	(0.101)	(0.131)	(0.135)
AGE_26_36	0.317**	0.312**	0.497***	0.426***	0.236**	0.231**	0.432***	0.424***
	(0.109)	(0.112)	(0.126)	(0.128)	(0.089)	(0.089)	(0.107)	(0.110)
AGE_37_47	0.415***	0.409***	0.472**	0.435**	0.159*	0.156*	0.425***	0.423***
	(0.106)	(0.110)	(0.158)	(0.164)	(0.078)	(0.078)	(0.101)	(0.104)
FEMALE	0.043	0.045	0.399***	0.482***	0.326***	0.330***	0.121*	0.125*
	(0.057)	(0.059)	(0.102)	(0.103)	(0.057)	(0.057)	(0.057)	(0.061)
HEAD	0.204	0.202	-0.055	-0.081	0.602***	0.606***	0.284*	0.279
	(0.128)	(0.132)	(0.198)	(0.206)	(0.129)	(0.132)	(0.141)	(0.144)
SPOUSE	0.217	0.219	-0.151	-0.175	0.402***	0.409***	0.266*	0.262*
	(0.114)	(0.116)	(0.165)	(0.169)	(0.108)	(0.111)	(0.116)	(0.117)
SINGLE	-0.170	-0.166	-0.262	-0.229	-0.222*	-0.221*	-0.209	-0.208
	(0.111)	(0.114)	(0.181)	(0.191)	(0.111)	(0.112)	(0.114)	(0.117)
LITERATE	-0.037	-0.037	0.225**	0.246**	0.100	0.106	0.024	0.025
	(0.076)	(0.078)	(0.076)	(0.083)	(0.062)	(0.062)	(0.084)	(0.086)
Household Characteristics								
FEHEAD	-0.012	-0.003	-0.041	-0.059	-0.096	-0.102	-0.033	-0.029
	(0.106)	(0.104)	(0.134)	(0.136)	(0.062)	(0.064)	(0.105)	(0.104)
DEPRATIO	-0.094**	-0.094**	0.020	0.008	-0.007	-0.006	-0.078*	-0.077*
	(0.031)	(0.032)	(0.038)	(0.039)	(0.033)	(0.033)	(0.031)	(0.033)
HHSIZE	0.111*	0.111*	-0.163***	-0.161**	0.027	0.028	0.098*	0.097
	(0.045)	(0.046)	(0.047)	(0.052)	(0.043)	(0.043)	(0.048)	(0.050)
HHSIZESQ	-0.006*	-0.006*	0.008**	0.007**	-0.001	-0.001	-0.006*	-0.006*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
HEAD_HERD	0.353***	0.346***	0.317***	0.264**	0.204***	0.202***	0.378***	0.372***
	(0.069)	(0.072)	(0.086)	(0.095)	(0.060)	(0.060)	(0.068)	(0.071)
HEAD_TRAD	0.077	0.072	0.365***	0.332***	0.873***	0.872***	0.234**	0.233**
	(0.070)	(0.069)	(0.076)	(0.087)	(0.072)	(0.073)	(0.081)	(0.081)
Location-level Charcteristics								
IDP	1.114***	1.094**	-0.878**	-0.769*	1.263***	1.158***	-1.286***	-1.251***
	(0.318)	(0.359)	(0.322)	(0.322)	(0.208)	(0.231)	(0.336)	(0.370)
CAMPDURAT	-0.024**	-0.025**	0.009	0.004	-0.033***	-0.033***	-0.028***	-0.029***
	(0.008)	(0.008)	(0.011)	(0.012)	(0.006)	(0.006)	(0.008)	(0.008)
LANGO06	0.270	0.076	-1.069***	-1.419***	0.129	0.154	0.397	0.254
	(0.450)	(0.528)	(0.177)	(0.256)	(0.175)	(0.177)	(0.396)	(0.442)
Infrastructure and security								
HL_SCH		-0.043		-0.054		-0.072		-0.008
		(0.114)		(0.152)		(0.090)		(0.118)
WAT_MRK		0.262*		0.132		-0.081		0.169
		(0.126)		(0.149)		(0.101)		(0.104)
SECURITY		0.113		-0.436***		0.095		0.117
		(0.114)		(0.087)		(0.108)		(0.114)
CONWELLS		-0.128		-0.599***		-0.029		-0.096
		(0.105)		(0.104)		(0.071)		(0.090)
DISTRICT FE	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Observations	5481	5470	5481	5470	5481	5470	5481	5470
Wald chi2	3397	3589	2512	4280	5292	6520	4360	4711
Rho	-0.614	-0.540	0.402	0.385	-0.661	-0.652	-0.697	-0.633
Wald test of Rho=0	9.149	6.059	4.081	3.952	12.52	11.45	8.923	6.565

Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05, sampling weights used.

[8] Reference category: AGE_48-64

Table 6. Bivariate probit results for different values of α

	CULTIVATES		*CRAFTS*		*TRADES*		*ANY ACTIVITY*	
	(i)	*(ii)*	*(i)*	*(ii)*	*(i)*	*(ii)*	*(i)*	*(ii)*
	$\alpha = 5$							
IDP	1.153***	1.141***	-0.886**	-0.771*	1.239***	1.134***	-1.324***	-1.294***
	(0.299)	(0.334)	(0.316)	(0.316)	(0.225)	(0.247)	(0.314)	(0.339)
	$\alpha = 10$							
	1.114***	1.094**	-0.878**	-0.769*	1.263***	1.158***	-1.286***	-1.251***
	(0.318)	(0.359)	(0.322)	(0.322)	(0.208)	(0.231)	(0.336)	(0.370)
	$\alpha = 15$							
	1.044**	1.022**	-0.823*	-0.713*	1.271***	1.167***	-1.267***	-1.226***
	(0.332)	(0.366)	(0.329)	(0.332)	(0.210)	(0.232)	(0.331)	(0.356)
Log likelihood								
$\alpha = 5$	-102917.4	-102988.61	-81361.19	-81394.72	-110351	-11083.00	-83151.26	-83201.269
$\alpha = 10$	-102786.14	-102451.10	-81270.23	-81302.03	-11022.86	-11014.51	-83064.44	-83094.17
$\alpha = 15$	-103123.31	-103462.94	-81523.11	-81755.01	-110548.68	-11091.33	-83357.73	-83401.96

Standard errors in parentheses. Sampling weights used. * significant at 10%; ** significant at 5%; *** significant at 1%. District fixed effects included. Same variables used in table 5 for respective specification. Values for $\alpha = 10$ repeated here for consistence purposes.

Table 7: Effect of IDP status on activity choices (Excluding commuters)

	CULTIVATES		*CRAFTS*		*TRADES*		*ANY ACTIVITY*	
	(i)	*(ii)*	*(i)*	*(ii)*	*(i)*	*(ii)*	*(i)*	*(ii)*
Individual characteristics								
AGE_15_25[9]	0.377**	0.383**	0.292	0.292	0.147	0.148	0.453***	0.455***
	(0.129)	(0.133)	(0.173)	(0.172)	(0.106)	(0.106)	(0.131)	(0.136)
AGE_26_36	0.285*	0.290*	0.494***	0.494***	0.232**	0.232**	0.399***	0.400***
	(0.111)	(0.115)	(0.131)	(0.129)	(0.088)	(0.088)	(0.109)	(0.113)
AGE_37_47	0.400***	0.404***	0.474**	0.472**	0.156*	0.157*	0.411***	0.417***
	(0.108)	(0.113)	(0.157)	(0.158)	(0.078)	(0.078)	(0.102)	(0.107)
FEMALE	0.044	0.039	0.420***	0.417***	0.323***	0.324***	0.123*	0.122*
	(0.059)	(0.059)	(0.106)	(0.107)	(0.062)	(0.062)	(0.058)	(0.059)
HEAD	0.168	0.166	-0.071	-0.073	0.593***	0.594***	0.251	0.247
	(0.133)	(0.136)	(0.203)	(0.202)	(0.132)	(0.133)	(0.148)	(0.150)
SPOUSE	0.183	0.189	-0.153	-0.153	0.400***	0.401***	0.230	0.233
	(0.119)	(0.118)	(0.168)	(0.166)	(0.110)	(0.110)	(0.124)	(0.124)
SINGLE	-0.181	-0.185	-0.241	-0.240	-0.249*	-0.251*	-0.217	-0.222
	(0.120)	(0.122)	(0.184)	(0.184)	(0.121)	(0.122)	(0.123)	(0.125)
LITERATE	-0.047	-0.044	0.257**	0.256**	0.111	0.113	0.018	0.021
	(0.079)	(0.082)	(0.081)	(0.081)	(0.065)	(0.065)	(0.087)	(0.089)
Household Characteristics								
FEHEAD	-0.011	-0.001	-0.032	-0.026	-0.097	-0.099	-0.035	-0.030
	(0.109)	(0.109)	(0.139)	(0.139)	(0.065)	(0.066)	(0.108)	(0.108)
DEPRATIO	-0.091**	-0.091**	0.028	0.029	-0.003	-0.003	-0.074*	-0.074*
	(0.033)	(0.034)	(0.037)	(0.036)	(0.033)	(0.034)	(0.033)	(0.034)
HHSIZE	0.106*	0.109*	-0.173***	-0.174***	0.026	0.026	0.092	0.093
	(0.046)	(0.047)	(0.047)	(0.047)	(0.045)	(0.045)	(0.050)	(0.050)
HHSIZESQ	-0.006*	-0.006*	0.008**	0.008**	-0.001	-0.001	-0.006*	-0.006*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
EVER_HERD	0.341***	0.345***	0.320***	0.320***	0.207***	0.206***	0.370***	0.374***
	(0.073)	(0.077)	(0.089)	(0.091)	(0.062)	(0.062)	(0.072)	(0.076)
HEAD_TRAD	0.099	0.104	0.357***	0.355***	0.869***	0.871***	0.258**	0.265**
	(0.074)	(0.076)	(0.076)	(0.076)	(0.076)	(0.075)	(0.085)	(0.089)
Location-level Charcteristics								
IDP	0.947*	0.829*	-0.826*	-0.766*	1.252***	1.178***	-1.168**	-1.096*
	(0.477)	(0.421)	(0.337)	(0.343)	(0.238)	(0.252)	(0.431)	(0.550)
CAMPDURAT	-0.025**	-0.025**	0.010	0.010	-0.034***	-0.034***	-0.030***	-0.030***
	(0.008)	(0.009)	(0.012)	(0.012)	(0.007)	(0.007)	(0.008)	(0.008)
LANGO06	0.187	-0.052	-1.065***	-1.118***	0.105	0.117	0.345	0.185
	(0.537)	(0.680)	(0.186)	(0.245)	(0.192)	(0.193)	(0.454)	(0.543)
Infrastructure and security								
HL_SCH		-0.064		-0.017		-0.051		-0.019
		(0.118)		(0.169)		(0.093)		(0.129)
WAT_MRK		0.284		0.134		-0.046		0.189
		(0.150)		(0.159)		(0.106)		(0.120)
SECURITY		0.114		-0.448***		0.099		0.118
		(0.121)		(0.091)		(0.109)		(0.120)
CONWELLS		-0.119		-0.566***		-0.001		-0.088
		(0.107)		(0.113)		(0.078)		(0.091)
DISTRICT FE	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Observations	5128	5128	5128	5128	5128	5128	5128	5128
Wald chi2	3198	3918	2601	4106	4832	5368	4715	4757
Rho	-0.540	-0.410	0.383	0.402	-0.643	-0.639	-0.650	-0.560
Wald test of Rho=0	3.299	3.046	3.452	3.540	9.607	9.413	4.903	2.382

Standard errors in parentheses. Sampling weights used. * significant at 10%; ** significant at 5%; ***

[9] Referecnce category: AGE_48-64

Figure 1: Districts covered by Northern Uganda Survey (2007)

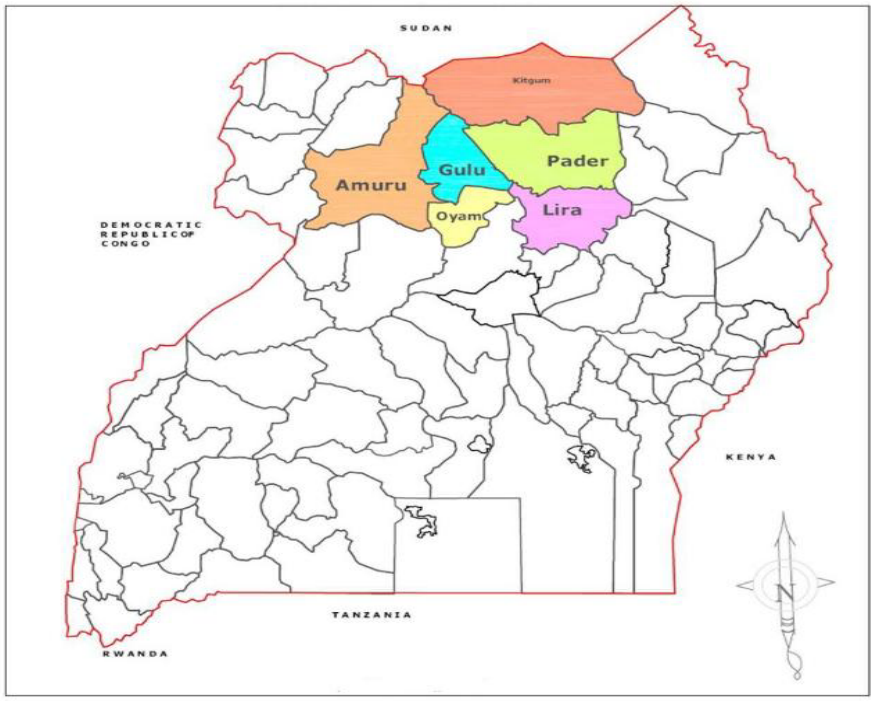


Figure 2.Distribution of conflict intensity at place of birth of the head

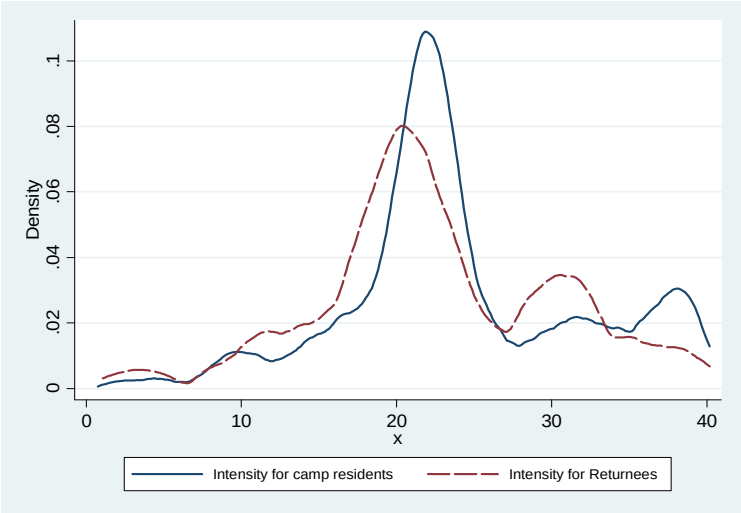
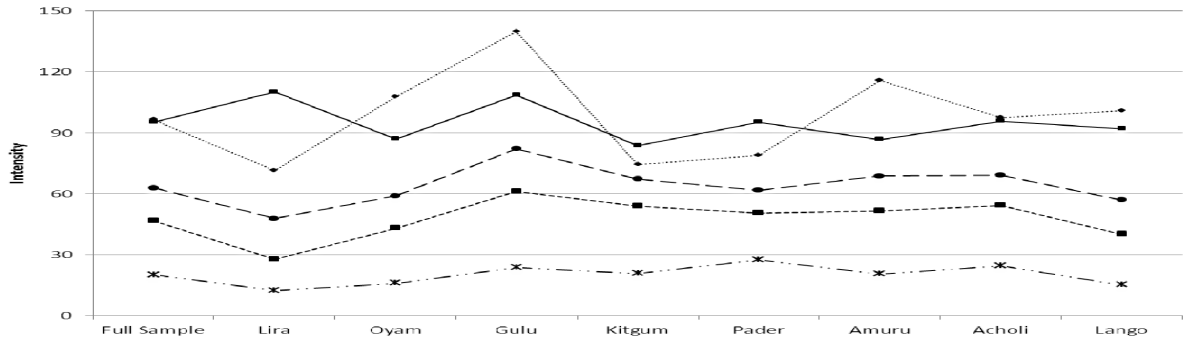
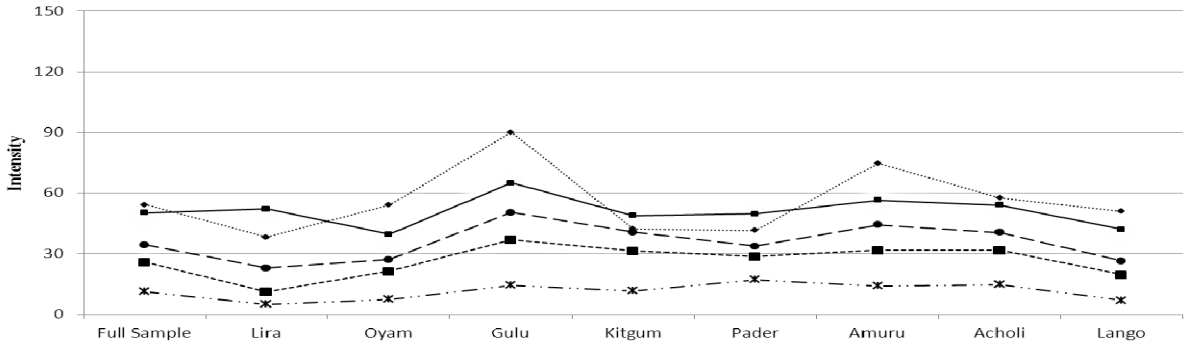


Figure 3. Variations in conflict index at the place of birth of the head across districts (2002-2006).

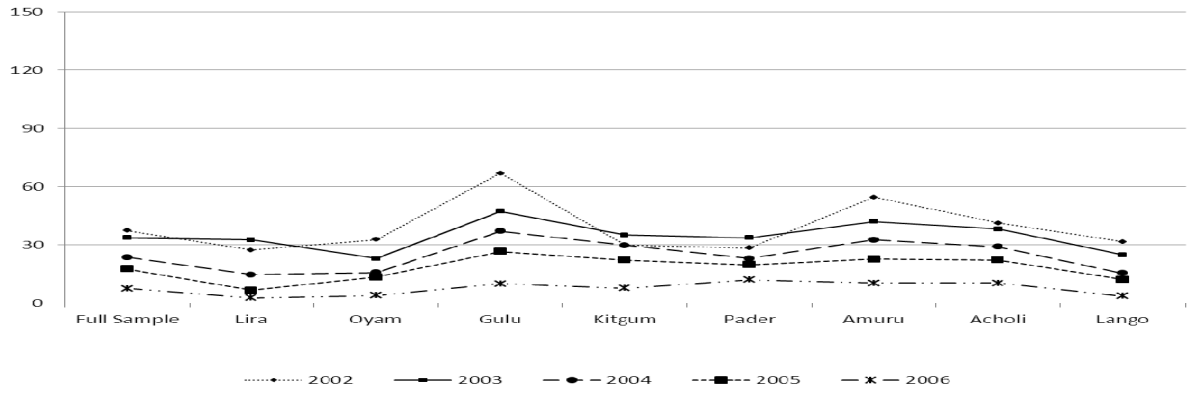
Panel A: $\alpha = 5$



Panel B: $\alpha = 10$



Panel C: $\alpha = 15$



Notes: Acholi sub region comprises of Gulu, Kitgum, Pader and Amuru district. Lango subregion comprises of Lira and Oyam districts. Plot based on weighted mean intensity for respective locations, computed at individual level.